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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/862,421	05/23/2001	Kazushi Sato	SON-2107	8467

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WASHINGTON, DC 20036

EXAMINER

SENFİ, BEHROOZ M

ART UNIT	PAPER NUMBER
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2613

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DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/862,421

Applicant(s)

SATO ET AL.

Examiner

Behrooz Senfi

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 16-21 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 – 4 and 18, are rejected under 35 U.S.C. 102(e) as being anticipated by Sugiyama (US 6,327,306).

Regarding claims 1 and 18, Sugiyama '306 discloses, "image/picture information conversion, converting interlaced scanned input compressed picture information, compressed in accordance with a first compression coding system, into progressive scanned output compressed picture information, compressed in accordance with a second compression coding" (i.e. figs. 1 – 2, interlaced coder and progressive coder, abstract, col. 4, lines 33+), and "synthesis means for synthesizing second activity information of a pixel block constituting a frame of the output compressed picture information using first activity information " reads on (figs. 1 and 6, interpolation process as synthesis means with consideration of the motion (activity), units 57, 60 and 61, col. 1, lines 27+), and "encoding means for encoding using second activity information as a parameter of adaptive quantization "(i.e. fig. 6, quantizer 55).

Regarding claims 2 - 4, Sugiyama '306 discloses, "quantization scale" (i.e. fig. 6, 55) and "code volume" (i.e. col. 4, lines 56 - 65).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiyama '306 in view of Sethuraman (US 6,167,088).

Regarding claim 5, Sugiyama '306 teaches, image information conversion and Converting interlaced scanned input compressed picture information to progressive scanned output compressed picture information (i.e. figs. 1 - 2, interlaced coder and progressive coder, abstract, col. 4, lines 33+). Although Sugiyama '306 fails to explicitly teach "pixel block of luminance" as claimed. However, figs. 1 - 2 of Sugiyama '306 teaches sequence of images on the input signal path IN, it is known that in accordance with the MPEG standards, these signals are further divided into a plurality of layers such that each picture is represented by plurality of macro-blocks and each macro-block comprises luminance and color difference signals. Furthermore, Sethuraman '088 (i.e. col. 3, lines 45 - 50) teaches picture being divided in accordance with MPEG standard into a plurality of macro-block and block and etc. and each macro-block includes pixel block of luminance and color difference signals. Doing so would improve the ability to discern changes between two successive pictures and image compression.

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5. Claim 6 – 12, 17 and 19 – 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiyama '306 in view of Sasaki et al (US 5,565,921).

Regarding claim 6, Sugiyama '306 teaches, image information conversion and Converting interlaced scanned input compressed picture information to progressive scanned output compressed picture information (i.e. figs. 1 – 2, interlaced coder and progressive coder, abstract, col. 4, lines 33+) with consideration of the activity (motion vector). Sugiyama '306 fails to explicitly teach the equation " $X=Q.B$, quantization parameter = quantization step times bit allocated code" as claimed. However the above features are well known and used in prior art of the record, as evidenced by Sasaki '921 (i.e. col. 34, lines 45 – 55). Taking the combined teaching of Sugiyama '306 and Sasaki '921 as a whole determines " $X=Q.B$ " as taught by Sasaki '921 to improve image signal processing and suppress deterioration of the image quality.

Regarding claim 7 – 12, 19 and 20 combination of Sugiyama '306 and Sasaki '921 teaches, "allocated code volume" (i.e. fig. 1, rate controller, col. 34, lines 38+ of Sasaki '921) and "non-zero DCT coefficients" (i.e. col. 19, lines 45+ of Sasaki '921) and the claimed "average value" and "minimum value" reads on (i.e. col. 28, lines 5 – 20, wherein teaches absolute difference value with respect to the motion vector (activity) in image interpolation (synthesizes) process of Sasaki '921).

Regarding claims 17 and 21, combination of Sugiyama '306 and Sasaki '921 teaches, "delaying for one frame period" (i.e. col. 22, lines 50 – 51 of Sasaki '921).

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6. Claims 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiyama '306 and Sasaki '921 as applied to claims 6 – 12, 17, 19 – 21, further in view of Kadono (US 6,590,936).

Regarding claim 14, combination of Sugiyama '306 and Sasaki '921 teaches, "image information conversion and converting interlaced scanned input compressed picture information to progressive scanned output compressed picture information" (i.e. figs. 1 – 2, interlaced coder and progressive coder, abstract, col. 4, lines 33+) with consideration of the activity (motion vector) and "average value" and "minimum value" (i.e. col. 28, lines 5 – 20, wherein teaches absolute difference value with respect to the motion vector (activity) in image interpolation (synthesizes) process of Sasaki '921). Although combination of Sugiyama '306 and Sasaki '921 teaches, converting interlaced scanned input to progressive scanned output, but fails to explicitly teach "conversion of MPEG-2 to MPEG-4". However such feature are well known and used in prior art of the record as evidenced by Kadono '936 (i.e. col. 4, lines 49 – 58), wherein teaches transform coded data MPEG-1 or MPEG-2 into coded data based on the MPEG-4. Therefore, taking the combined teaching of Sugiyama and Sasaki and Kadono, would make the claimed conversion/transformation of "MPEG-2 to MPEG-4" which can be used as an alternative in telecommunication systems obvious to one skilled in the art at the time of the invention was made.

Regarding claim 16, combination of Sugiyama '306 and Sasaki '921 and

Kadono '936 teach the claimed "delay buffer" (i.e. fig. 1, buffer 119 of Sasaki).

Allowable Subject Matter

7. Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Behrooz Senfi** whose telephone number is **(703) 305-0132**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Chris Kelley** can be reached on **(703) 305-4856**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relative to the status of the application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

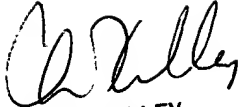
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B. S. B. J.

9/5/2004


CHRIS KELLEY
SUPERVISORY PATENT EXAMINER
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